

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file of this National Stage Application from the International Bureau (PCT Rule 17.2(a)).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4, 6 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Ge et al (US 5,510,915).

Pertaining to claims 1, 4, 6 and 7, Ge et al discloses a display device, as shown in Figure 5, comprising a transparent backlight plate **501** to illuminate a pixel area **518**, and a first switchable diffuser **514** arranged to be transparent to the light emitted from backlight **501** when an external voltage (an electric field) is applied to said diffuser **514** via transparent electrodes **507** and **513**. See col. 4 lines 26-67, and col. 5 lines 1-11, Figure 5. Moreover, diffuser (PDLC) **514** is arranged to diffuse the light emitted from backlight **501** when no voltage (no electric field) is applied across the transparent electrodes **507** and **513**. See col. 5 lines 11-12. Ge et al additionally teaches the backlight **501** may be formed of a plurality of point light sources. See col. 5 lines 64-67 and col. 6 lines 1-10. Figure 9 illustrates an embodiment using a plurality of point light

sources, and as is apparent from Figure 9, the area of each point light source **903** is smaller than the area of the pixel **915** which is illuminated by said light point source **903**. See col. 8 lines 1-20. Returning to Figure 5, Ge et al discloses an optical element **503** arranged adjacent to the backlight **501** such that the light **502** from said backlight **501** evenly illuminates the corresponding pixel area **518**. See col. 4 lines 26-29. Ge et al discloses the structure as an Out-Active-Matrix LCD, thereby inherently disclosing the plurality of light sources forming said backlight **501** are arranged in a row/column fashion and further include an addressing means (TFT) to address the rows and columns of light emitting means. See abstract.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1, 2, 5, 7, and 8 are rejected under 35 U.S.C. 102(e) as being anticipated by Daly (US 7,064,740).

Pertaining to claims 1, 2 and 5, Daly discloses a display device **20** comprising a transparent plate **22** provided with a plurality of LED light emitters **42**, wherein each of said LED emitters **42** is operative to illuminate a pixel area **38**. A diffuser **36** comprises a LC gel arranged between two sheets of conducting glass **32** and **34**, wherein an electric field is applied across sheets **32** and **34** which causes the LC gel to scatter or diffuse light from the LED emitters **42**, whereas a lack of electric field across sheets **32** and **34** cause the LC gel to become transparent and transmit light from LED emitters **42** to the pixel area **38**. See col. 3 lines 32-50, and col. 4 lines 23-30, Figure 1. The LED emitters **42**, being point-light sources, have a smaller area than their corresponding pixel area.

Concerning claims 7 and 8, Daly discloses the LED emitters **42** are arranged in a column/row fashion on the transparent plate **22**, and said display **20** further includes addressing means to address rows and columns of LED emitters **42**. See col. 5 lines 13-29. Moreover, the LED emitters **42** are interconnected such that a fixed predetermined image can be shown in the display when the LC gel is operated in scattering or diffusing mode. See col. 5 lines 23-40.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Daly (US 7,064,740).

With regard to claim 3, Daly discloses the display **20** as described above. However, Daly does not disclose the LED emitters **42** as being made of a PLED or OLED material. Nonetheless, it would have been obvious to one of ordinary skill in the art to form the emitters of an OLED or PLED material, as OLEDs, PLEDs, and LEDs are considered equivalent elements (light emitters appropriate for LCD displays), and the use of an OLED or PLED in view of Daly disclosing an LED represents simple

substitution of one known, equivalent element for another to obtain predictable results. LEDs, OLEDs, and PLEDs will all give the predictable result of providing sufficient backlighting for an LCD display. All three types of emitters are known in the art, and a person of ordinary skill has good reason to pursue the known options within his or her technical grasp, and therefore it would have been obvious to try OLEDs and PLEDs as the lighting source of Daly. If such a substitution leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense. *KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385 (2007).

Allowable Subject Matter

Claim 9 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The most applicable prior art does not disclose or reasonably suggest a display arranged to operate in a transparent mode and a display mode, wherein said device comprises a transparent plate having a plurality of light emitting means such that each of said emitting means is operative to illuminate a pixel area and the area of each emitter means is smaller than the area of its corresponding pixel area, and wherein said device further comprises a first switchable diffuser arranged on a first side of said transparent substrate and a second switchable diffuser arranged parallel to said first switchable diffuser on a second side of said transparent substrate, said second side being opposite to said first side, wherein both the first and second switchable diffuser

are arranged to be transparent to the light from said emitter means when operated in transparent mode and diffuse to the light emitted from said emitter means when operated in diffuse mode, and wherein at least part of said emitter means is operative to illuminate the corresponding pixel area in said display mode. While the use of multiple switchable diffusing areas are well-known in the art (i.e. Hiji et al, discussed below), said multiple switchable diffusing areas are each provided on the same side of a backlight, and therefore the applicable art does not show switchable diffusers in either side of a transparent plate having a plurality of light emitting means.

Conclusion

The following prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Hiji et al (US 5,872,609), Liang et al (US 2002/0126249), Sekiguchi (US 2003/0086037), Khan et al (US 2005/0036077), Sekiguchi et al (US 7,136,138), Yoshida et al (US 5,903,329), Bayrie et al (US 2002/0118320), Konuma et al (US 5,301,046), Loiseaux et al (US 5,416,617), Matsumura et al (US 6,246,451).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rhonda S. Peace whose telephone number is (571)272-8580. The examiner can normally be reached on M-F (8-5).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272- 2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Rhonda S. Peace/
Examiner, AU 2874

/Michelle R. Connelly-Cushwa/
Primary Examiner, Art Unit 2874